

REMARKS

The specification and the claims have been amended to more particularly point out the present invention. It is believed that the amendments to the specification correct the informalities raised by the examiner. As discussed below, it is also believed that the amended claims 2 to 4 overcome the examiner's indefiniteness rejections. Applicants believe that no new matter was added by virtue of the amended claims and amended sections of the specification.

Objection to Brief description of the figures

The Examiner has objected to the brief description of figures 1,4, and 5. Applicants have amended the brief description of the figures to include a legend for each of Figures 1, 4, and 5. Support for the amendment to the brief description of Figure 1 is found on page 25, lines 7-12. Support for the amendment to the brief description of Figure 4 is found on page 39, lines 34-36 and on page 40, lines 1-5. Support for the amendment to the brief description of Figure 5 is found on page 41, lines 7-29.

Obviousness-type double patenting rejection

The examiner has provisionally rejected claim 7 as being unpatentable over claims 1-6 of co-pending Application No. 10/616,689 due to obviousness-type double patenting. Upon receipt of the notice of allowance, Applicant will file the requisite terminal disclaimer with the PTO.

Claims 5 and 6 indefiniteness rejection

The examiner has rejected claims 5 and 6 as indefinite due to lack of antecedent basis. Claim 4 has been amended to recite "a cloning vector" and thus the recitation of "the vector of claims 2 or 4" in claims 5 and 6 now has antecedent basis. We therefore request the Examiner withdraw the indefiniteness rejection regarding claims 5 and 6.

Claim 3 indefiniteness rejection

The examiner has also rejected claim 3 as indefinite. Amended claim 3 now recites "*Mme*I endonuclease and methyltransferase" and is now believed to be defined. Accordingly, we respectfully request the Examiner withdraw the indefiniteness rejection regarding claim 3.

Claim 7 rejections

To expedite the prosecution of this application, Applicants have withdrawn Claim 7. To avoid confusion, Applicants expressly reserve the right to file a divisional covering the subject matter encompassed by claim 7 as well as the supportive text found within the specification.

Objection to the figures

Applicants have provided marked-up versions of the drawings that address the objections of Figures 2, 3 and 7 made by the Examiner. Applicants have also enclosed replacement drawings for all the figures that include "1/16," "2/16", etc. No new matter is believed to have been added.

Morgan et al.
Serial No. 10/616,624
Date Filed: July 10, 2003

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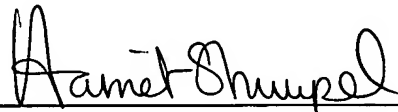
CONCLUSION

For the reasons set forth above, Applicants respectfully submit that this case is in condition for immediate allowance. Early and favorable consideration leading to prompt issuance of this Application is earnestly solicited.

Applicants petition for a three-month extension of time and submit check in the amount of \$510.00 to cover the fees. Please charge any deficiencies to Deposit Account No. 14-0740.

Respectfully submitted,

NEW ENGLAND BIOLABS, INC.

A handwritten signature in cursive script, reading "Harriet Strimpel", written over a horizontal line.

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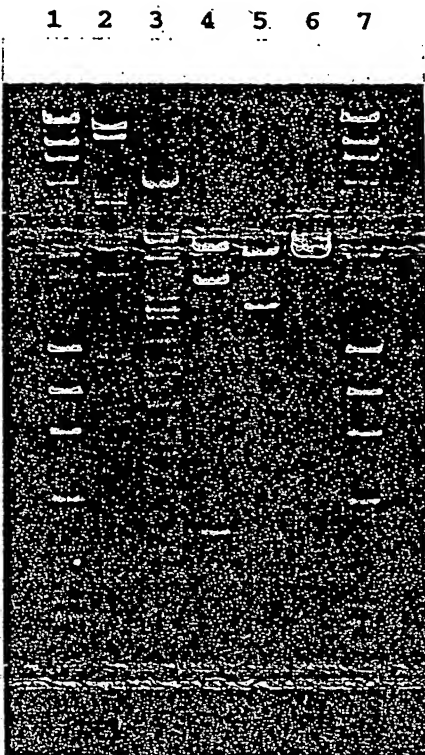
Date: May 3, 2006

Customer No.: 28986



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FIGURE 1 ~~1~~ MneI DNA CLEAVAGE



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~~FIGURE 2: MMT DNA SEQUENCE~~

FIG. 2A

1 GAATTCCAGA TAGGTAGTCC TTGGTACTT CCATCCCAAC CAGTGTACG
51 TTCCGCGCCA AACCAATCGG TTAAAGTGTA AGAAAGTCTT GCACTGAAGT
101 AGCTGTAGGA CAAACCGAAG TTAACCTCTG TGGTATCCGA GCGACCACCT
151 TTAGGTGTTT GACGGAAGCQ TGCTGCGTCA CCTGCCAAGT TATATTTCTT
201 CCATGAACCA CCTGGGTACA GGTAGCTGAT CAAACCAGCA GTCCAACCCA
251 AGCCTTCAAT AGCAGGAATA GTTCCGTTAT ACCCACCATA AATATCAATT
301 TCGGCAGTTG CATCAGGGAA GGTATTTGGT GTCACGTTTG AACCCCATGC
351 ACCGACATAA AAGCCGCTGT CATGAGTAAT ATCAATACCG CCTTGAACGG
401 CAGGTTTGTG CCAGTTTGTG GAAATACCAC GAGCATAGTA ATCTGAAACA
451 AATCCAACGT TTGCAGTAGC AGCCCAGGCT GATTTTCTT CTTTAGCCTC
501 TTCAGCTGCG TATGAAACTT GGGCAAAAGA TAATGTGCTT AACACTGCTG
551 TGAGCAATAT AGATTGACGC ATTATGAGTC CTCTCTCTGT GAAATCTTTG
601 ATTAAGTTGT TGTAACGAG AATGAAACAA CAACCACAAA GCAAAGCAGG
651 TGCCAAACTA TAAATAACAT TATAATCAAT TATTTAAAT ATATTTATAA
701 TCTAAAATAT TAAATTAATT ATTAAATAAA CTGTTTTTFA TTGATTFAAC
751 TCTAAAACAT ATGGGTGCAA CCACCCTTTT TACTCACTGA TAATGCTAAN
801 ATAGCCAACA AAGGAGCCTT CACCATGCTG ATTTCAAATG AAAAAATTCA
851 GGAATTATCT TAAAAATCA AACAACATAAT CGAATCAAGC CCCATTTCAG
901 AGCTAAATAA CAACTTGCAT GCACTAATTC AGGGCGCACT CACCPAAATG
951 GAACTTGTTT CGCGTGAAGA ATTCGATATC CAATCTGCAT TATTAGCGCG
1001 CACGCAAGAG CAATTAAAC GTCTTGAAGA AAAAATCAGC CAGCTTGAAG
1051 AAGGGCAGGC ATCCAGAAAG TAAAAATTAA TTTACAATTG TTAGCATTCC
1101 ATTATTGAGG AGTGGGTAT GAGTCTGCGG GTGTTATAGA GTCCGCGGT

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FIG. 2B

1151 AAGCGGCATG GAGGCGCCAG AAGTGGTGGT AGAAGTCCAC TTGGCGAATG
1201 GACTACCCAG CTTTACCATT GTTGAAACAT ATTGAAACTT TAAGCCTTAG
1251 CATTTTTTCA AATATACAAA TGCCCCAAGC TGGTGCATTA AGAAGAATGT
1301 AACAACTCCC TGCAGACTAG GAATAACTTC ATGATTTAAC GAACATCCCT
1351 GAGTTTCAAA GTCGAATCTT CTCGTGTTGC AAATTTCTAC AGCTTCCTTT
1401 CTGACCCTCT TGCACCAAAT TGCACATGCG CGCTAATAAA TCTTCTGCTA
1451 TCCAATAATG TCCAACTAAC CCTTTATGGA CTCCTTAAAA AGATTTAATA
1501 AATGATTAAG ATGAATTCAA GGAATTTGAT GCCTGGAAAT ATGGCAAAG
1551 CAAAAGGCA GCCCAGTGCT GACTTTTTTG TTTTAACATT GGCCCATATA
1601 TCCAATTTCA AATAATTTAA AAATTATCGG GAGCTAATCT GTGGCTTTAA
1651 GCTGGAACGA GATAAGAAGA AAAGCTATTG AGTTTTCTAA AAGATGGGAA
1701 GACGCCTCAG ATGAAAACAG TCAAGCCAAA CCCTTTTTAA TAGATTTTTT
1751 CGAAGTTTTT GGAATAACTA ATAAGAGAGT TGCAACATTT GAGCATGCTG
1801 TGAAAAGTT CGCCAAGGCC CATAAGGAAC AATCTCGAGG ATTCGTAGAT
1851 TTGTTTTGGC CTGGCATTCT TCTTATTGAA ATGAAAAGCA GAGGTAAAGA
1901 CCTCGACAAA GCGTATGACC AGGCACTTGA TTACTTTTCT GGCATTGCAG
1951 AAAGAGACTT ACCCAGATAC GTTTTAGTTT GCGACTTCCA GCGTTTCAGA
2001 TTAACAGACC TAATAACAAA AGAGTCAGTT GAATTTCTTT TAAAGGACTT
2051 ATACCAAAAT GTGAGGTCTT TTGGTTTTAT AGCTGGTTAT CAAACTCAAG
2101 TAATCAAGCC ACAAGACCCT ATTAATATTA AGGCGGCTGA ACGGATGGGT
2151 AAGCTTCATG ACACCCTGAA GTTGGTTGGA TATGAGGGAC ACGCTTTAGA
2201 ACTTTATCTA GTGCGTTTAC TTTTTTGCTT ATTCGCAGAA GACACAATA
2251 TTTTGTAGAA AAGTTTATTC CAAGAATATA TCGAGACAAA GACGCTAGAG
2301 GACGGCAGTG ACCTTGACAA TCATATCAAT AACTTTTTTT ATGTTCTCAA
2351 TACCCAGATA CAAAAAGAT TAAAGAATCT AGAAGAACAC CTTCCTCTAT

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FIG. 2C

2401 TTCCATATAT CAATGGAAAA CTTTTTCGAGG AGCCACTTCC GCCAGCTCAG
2451 TTTGATAAAG CAATGAGAGA GGCATTGCTT GACTTGTGCT CATTAGATTG
2501 GAGCAGGATT TCACCAGCAA TATTTGGAAG TTTATTCCAA AGCATTATGG
2551 ATGCTAAAAA GAGAAGAAAT CTGGGGGCAC ACTACACCAG CGAAGCAAAT
2601 ATTCTCAAGT TAATCAAGCC ATTGTTTCTT GACGAGCTCT GGGTAGAGTT
2651 CGAGAAAGTT AAAAATAATA AAAATAAATT ACTAGCGTTC CACAAAAAAC
2701 TAAGAGGACT TACATTTTTT GACCCTGCAT GCGGTTGCGG AAATTTTCTT
2751 GTAATCACAT ACCGAGAACT AAGACTTTTA GAAATTGAAG TGTTAAGAGG
2801 ATTGCATAGA GGTGGTCAAC AAGTTTTGGA TATTGAGCAT CTTATTCAGA
2851 TTAACGTAGA CCAGTTTTTT GGTATCGAAA TAGAGGAGTT TCCCGCACAG
2901 ATTGCTCAGG TTGCTCTCTG GCTTACAGAC CACCAAATGA ATATGAAAAT
2951 TTCAGATGAG TTTGGAAACT ACTTTGCCCG TATCCCACTA AAATCTACTC
3001 CTCACATTTT GAATGCTAAT GCTTTACAGA TTGATTGGAA CGATGTTTTA
3051 GAGGCTAAAA AATGTTGCTT CATATTAGGA AATCCTCCAT TTGTTGCTAA
3101 AAGTAAACAA ACACCGGGAC AAAAAGCGGA TTTACTATCT GTTTTTGGAA
3151 ATCTTAAATC CGCTTCAGAC TTAGACCTAG TTGCTGCTTG GTATCCCAAA
3201 GCAGCACATT ACATTCAAAC AAATGCAAAC ATACGCTGTG CATTTGTCTC
3251 AACGAATAGT ATTACTCAAG GTGAGCAAGT ATCGTTGCTT TGGCCGCTTC
3301 TGCTCTCATT AGGCATAAAA ATAAACTTTG CTCACAGAAC TTTAGCTGG
3351 ACAAATGAGG CGTCAGGAGT AGCGGCGGTT CACTGCGTAA TTATCGGATT
3401 TGGGTTGAAG GATTCAGATG AAAAAATAAT CTATGAGTAT GAAAGTATTA
3451 ATGGAGAACC ATTAGCTATT AAGGCAAAAA ATATTAATCC ATATTTGAGA
3501 GACGGGGTGG ATGTGATTGC CTGCAAGCGT CAGCAGCCAA TCTCAAAAT
3551 ACCAAGCATG CGTTATGGCA ACAAACCAAC AGATGATGGA AATTCCTAT
3601 TTAATGACGA AGAAAAAAC CAATTTTCTT CAAATGAGAC ATTCTTCTGA

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H16.2D

3651 AAATACTTCA GACGGTTTGT GGGCGGGGAT GAGTTCATAA ACAATACAAG
3701 TCGATGGTGT TTATGGCTTG ACGGTGCTGA CATTTCAGAA ATACGAGCGA
3751 TGCCTTTGGT CTGGGCTAGG ATAAAAAAG TCCAAGAATT CAGATTAAAA
3801 AGCTCGGCCA AACCAACTCG ACAAAGTGCT TCGACACCAA TGAAGTTCTT
3851 TTATATATCT CAGCCGGATA CGGACTATCT GTTGATACCT GAAACATCAT
3901 CTGAAAACAG ACAATTTATT CCAATTGGTT TTGTTGATAG AAATGTCATT
3951 TCAAGTAACG CAACGTATCA TATTCCTAGT GCTGAACCTT TGATATTTGG
4001 CCTGCTTTCA TCGACCATGC ACAACTGCTG GATGAGAAAT GTAGGAGGAA
4051 GGTTAGAAAG TCGTTATAGA TATTCTGCCA GCCTGGTTTA CAACACGTTT
4101 CCATGGATTG AACCCAACGA AAAACAATCG AAAGCGATAG AAGAAGCTGC
4151 ATTTGCGATT TTAAAAGCTA GAAGCAATTA TCCAAACGAA AGTTTAGCTG
4201 GTTTATACGA CCCAAAAACA ATGCCTAGTG AGCTTCTTAA AGCACATCAA
4251 AAAGTTGATA AGGCTGTGGA TTCTGTCTAT GGATTTAAAG GACCAAACAC
4301 AGAAATTGCT CGAATAGCTT TTTTGTTTGA AACATACCAA AAGATGACTT
4351 CACTCTTACC ACCAGAAAAA GAAATTAAGA AATCTAAGGG CAAAAATTAA
4401 TTAATGTATT TAACATTAAA CCACCCTGAT TTATTTGAA TAGTTCAAAT
4451 GCCTCCATGT GGAATAATCG CCTTCAATCA TATTAAAAA CCGACGCTAG
4501 TAATAAAAAC TTCAAAGAG GCCATATTAA CCGCCAAAAT TAATCGTGAA
4551 TTTAAAATAT ATCTTTATCA AACCACATCG GCTTGTGTTT TAGTAAGTGC
4601 ATTTTTTGAC GATTCTGATA GTCCACTATT CATTACAACA CCAATTGTTC
4651 GAGATGACCA AACTCTCTTA GACTTGTTAA GATTTTAAAT CAACAATGAT
4701 TTTACGATTT GCTTCTTTGA TGAAGTGAAC CGAGAATTTT TTTCCGTAA
4751 CGCAACTGGT AATTTAGTCT CTATCTTTGA GAGCATTAC TTGATGCCAC
4801 TGCCGAGCCC AGAGGAAGCC CACAATGCAT TGAATGAAGC GGAATTTTGG
4851 TTTAGTTTAC GCTTACCTGC TGATGATGAA TCATCTATCC AGGTTTCTTT

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FIG 2E

4901 ATTGGATAAT CTATTTCTTG ACGATTTTGT AATTTATGAC CTATCCTCAA
4951 ACAAAAACGA TATGACATCA TTGGTTAGAG AAATAAACC AGGATACTAT
5001 CAGGAAGCAG ATATTGCAAA GTTACTAACA AGAGCTTTTA GTTTGGAAAG
5051 CATTTATCAG AATCCAGTGA AAACAAGCGA TTCAAAGAG TTGGCAGACG
5101 TTGTGGTATT CGGCCAAAAG GAAATTTTAA TAATTCAAGC TAAAGATAGT
5151 GAAAACAATC AGAAACAAGT TTTAGAGGTT TCGTTAGACA AGAAATGCGC
5201 AAAGTCTTCA AAGAACTTT CTGAAGCTTT GGCACAACCTC ACCGACACTA
5251 TCTTAACAAT ATCCAATACA CCAATAGTTG ATGTTCTGGGT TGGTAAGAAA
5301 AAATGCACTC TGAACCTTGA GGGAAAGCAG CTTATTGGTA TCGTCGTTGT
5351 TAAAGAGCTT TTTAATGATA TTTACGATAA ATACAGTCAA AAAGTTTTTG
5401 AGCATGTAGA GTTGTCTAAA GCACCCATTG TCTTCTTTGA CTATCCAGAA
5451 TTTGCAAGAA TGACATTCA TTGTAATTCT GAGGAATTAT TACTTTATGC
5501 TTTGCATAGG ATATTTAGTT CTGCAATAGA AAATGGAATG TATAAACGAT
5551 TGAGATTTAC TCAACCTATC ATAAGTATG GTCATGACAG CTACTTCAGG
5601 ATACAAAACA GGCCCCATTC TGATGAGGCC TATTTAATTT GCACAGAGGA
5651 TGAAATGAAG CTCTCAAATA AGTTTAAAGA CTAAATTTAT ATTTTCC'TCA
5701 GTATCTTAAA AACAATATTC ATTAATTGG AAAGCCCGCA ATGATGTGTG
5751 CAGTATCAAT GCGGGCATCA GTATCCAGCT CTTGCAATAC ACGGAAGTAT
5801 CAAGAAGCGA ATCAGGATTC TAACCATAACC TTTTAAATTG CAACAATCTA
5851 ATTTCCATAA CATGTGTAGC TACATCGAAA AAAAGACCTC GAAGAGGTTG
5901 CAAGAGCGTC CAGCTCGCGG CATCAAAAGA CCCTAGTCTT TTGACAAGGG
5951 GGAGCCAAAA AACTGAGGTG GAGGAGCTTG CCGACGAAGC CAGGAAGCCC
6001 CAGCGTCCGG

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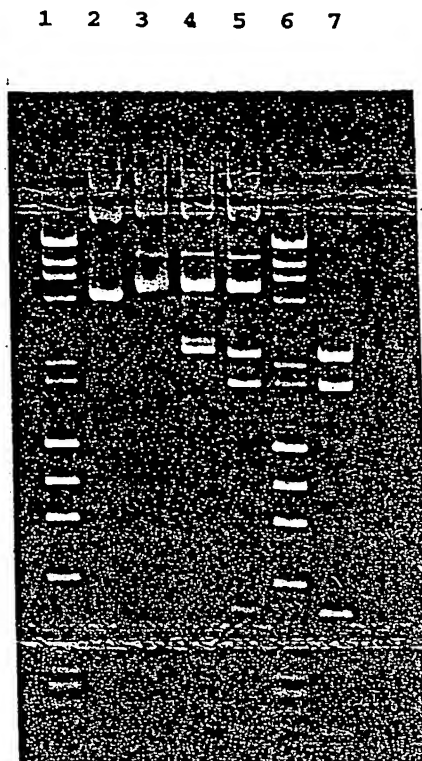
~~FIGURE 3: M-101 PEPTIDE ACID SEQUENCE~~

1 MALSWNEIRR KAIEFSKRWE DASDENSQAK PFLIDFFEVF GITNKR VATF
51 EHAVKKFAKA HKEQSRGFVD LFWPGILLIE MKSRGKDLDK AYDQALDYFS
101 GIAERDLPRY VLVCFQRFRL LTDLITKESV EFLLDLYQN VRSFGFIAGY
151 QTQVIKPQDP INIKAAERMG KLHDTLKLVG YEGHALELYL VRLLFCLFAE
201 DTTIFEKSLF QEYIETKTLE DGSDLAHHIN TLFYVLNTP E QKRLKNLDEH
251 LAAFPYINGK LFEEPLPPAQ FDKAMREALL DLCSLDWSRI SPAIFGSLFQ
301 SIMDAKKRRN LGAHYTSEAN ILKLIKPLFL DELWVEFEKV KNNKNKLLAF
351 HKKLRGLTFF DPACGCGNFL VITYRELRL EIEVLRGLHR GGQQVLDIEH
401 LIQINVDQFF GIEIEEPPAQ IAQVALWLT D HQNMKISDE FGNYFARIPL
451 KSTPHILNAN ALQIDWNDVL EAKKCCFILG NPPFVGKSKQ TPGQKADLLS
501 VFGNLKSASD LDLVAAWYPK AAHYIQT NAN IRCAFVSTNS ITQGEQVSL L
551 WPLLLSLGIK INFARTFSW TNEASGVA AV HCVIIGFGLK DSDEKIIY EY
601 ESINGEPLAI KAKNINPYLR DGVDVIACKR QQPISKLP SM RYGNKPTDDG
651 NFLFTDEEKN QFITNEPSSE KYFRRFVGGD EFINNTSRWC LWLDGADISE
701 IRAMPLVLAR IKKVQEFRLK SSAKPTRQSA STPMKFFYIS QPDTDYLLIP
751 ETSSSENQFI PIGFVDRNVI SSNATYHIPS AEPLIFGLLS STMHNCWMRN
801 VGGRLSRYR YSASLVYNTF PWIQPNEKQS KAIEEAAFAI LKARSNYPNE
851 SLAGLYDPKT MPSELLKAHQ KLDKAVDSVY GFKGPNT EIA RIAFLFETYQ
901 KMTSLLPPEK EIKKSKGKN*

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~~FIGURE~~ 4 pTBMmeI.1 IS RESISTANT TO MmeI CLEAVAGE

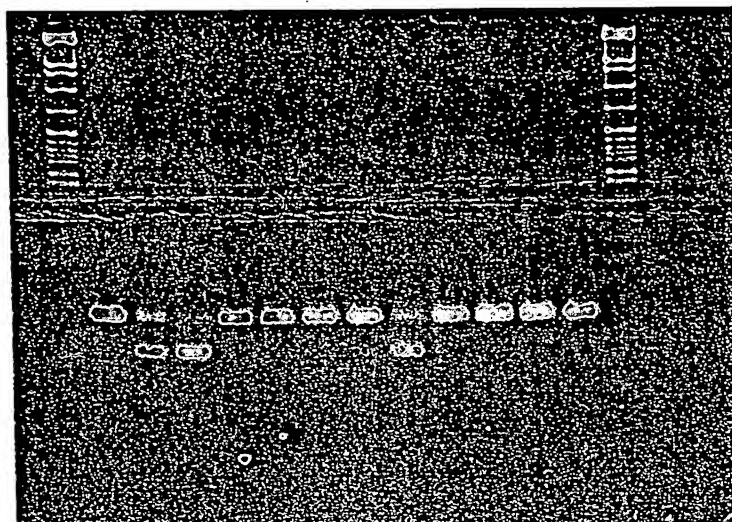


(FIG. 5 on this sheet)

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FIGURE 5, MmeI CLEAVAGE OF HEMI-METHYLATED SUBSTRATES

1 2 3 4 5 6 7 8 9 10 11 12 13 14



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FIGURE 6. ~~METHYLATION INCORPORATION BY M₆OT ENDONUCLEASE~~

Top Strand:	/	Bottom strand:	³ H-COUNTS
5'-TCCG <u>A</u> C-3'	/	5'-GTCG <u>G</u> A-3'	
unmethylated:	/	unmethylated	19,972
unmethylated:	/	methylated:	14,447
methylated:	/	unmethylated:	1,266
methylated:	/	methylated:	917

'A' indicates position of N6-methyl adenine in the DNA substrate

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FIG. 7A

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Figure 7 Multiple Sequence Alignment of MmeI and homologous
Polymers

FileUp of: @mme.list2

Symbol comparison table: GenRunData:blosom62.cmp CompCheck: 1102

GapWeight: 6
GapLengthWeight: 1

Name: mmeIfeLORF3P = gi|28373198|ref|NP_783835.1| (SEQ ID NO:3)
Name: mmeLrel21P = gi|23451826|gb|AAN32874.1|AF461726_1 (SEQ ID NO:4)
Name: mme = MmeI amino acid sequence (SEQ ID NO:5)
Name: mmeNMA1791 = gi|15794682|ref|NP_284504.1| (SEQ ID NO:6)
Name: mmeBSU0677 = gi|16077744|ref|NP_388558.1| (SEQ ID NO:7)
Name: mmeegcry = gi|9945797|gb|AAG03371.1| (SEQ ID NO:8)
Name: mmePflQ8 = gi|23451826|gb|AAN32874.1|AF461726_1 (SEQ ID NO:9)
Name: saro3834 = gi|23110638|gb|ZP_00096791.1| (SEQ ID NO:10)
Name: mmeMSI135 = gi|20803963|emb|CAD31540.1| (SEQ ID NO:11)
Name: mmeCC0826 = gi|16125079|ref|NP_419643.1| (SEQ ID NO:12)
Name: mmeDR0119.1 = gi|15807788|ref|NP_285443.1| (SEQ ID NO:13)
Name: mmeDR2267 = gi|15807258|ref|NP_295988.1| (SEQ ID NO:14)

	1			50
mmeIfeLORF3P	-----	-----MPT	RQQAAREFVK TWS.SDKKGR	EDADRQTFWN
mmeLrel21P	-----	-----	-----	-----
mme	-----	---MALSWNE	IRRKAIEFSK RWE.DASD..	ENSQAKPFLI
mmeNMA1791	-----	-----MKTLLO	LQTAAQNFAA YYK.DQTD..	ERREKDTF*N
mmeBSU0677	-----	-----MALID	LEDKIAEIVN R.E.DHSD..	.....FLY
mmeegcry	MVMAPTTFVD	RATIRHNLTE	FKLRWLDRIK QWEAENRPAT	ESSHDQQFWG
mmePflQ8	-----	-----	-----	-----
saro3834	-----	-----	-----	-----
mmeMSI135	-----	---MSLGAAGL	TPITPAAFIK KWRKSELG..	ERQAAQEHFL
mmeCC0826	-----	-----	--MTPAQFVK KWSDSQLR..	ERQASQEHFL
mmeDR0119.1	-----	-----	--MHPQEFAD TWSRRALKAT	ERDSYVQHWL
mmeDR2267	-----	-----MPQTE	TAQRMEDFVA YW..RTLKGD	EKGESQV.FL
	51			100
mmeIfeLORF3P	DLLQRVYGID	N.YYDYITYE	KDVQVKADGK VTTRRIDGYI	P.STKIMVEM
mmeLrel21P	-----	-----	-----	-----
mme	DFFE.VFGIT	N.KR...VAT	FEHAVKKFAK AHKEQSRGFV	DL...FWPGI
mmeNMA1791	EFFA.IFGID	R.KN...VAH	FEYPVKD..P ADNTQ...FV	DI...FWEGI
mmeBSU0677	ELLG.VYDVP	R.AT...ITR	....LKK.GN QNLTKRVGEV	HLKNKVV...
mmeegcry	DLLDC.FGV	N.ARDLYLY.	.....QRSK RASTGRTGKI	DM...FMPGK
mmePflQ8	-----	-----	-----	-----
saro3834	-----	-----	-----	-----M
mmeMSI135	D.ICSLVGHP	SP.SDEDPTG	AFFAFEKGAN KLG.GGKGFA	D.VWK..KGH
mmeCC0826	D.LCRMLEVP	TP.AEDDPLG	ERYCFERGAA KTG.GGDGWA	D.VWR..KGC
mmeDR0119.1	D.LCQLLHHE	APGADPD...	..YKFERRVT KVGTKDKGFA	D.VFK..KAH
mmeDR2267	DRLFQAFGH.	...AGYKEAG	AE..LEYRVA KQG.GGKKFA	DLLWR..PRV
	101			150
mmeIfeLORF3P	KGKNIKDSLK	PITQSGGD..	.....ELT PFEQAKRYAN	FLPN...SEQ
mmeLrel21P	-----	-----	-----	-----
mme	LLIEMKSRGK	DL.....D..	.....KAY D..QALDYFS	GIAERD...L
mmeNMA1791	FLAFHKSAK	NL.....T..KAK E..QAERYIQ	EJGRTKPSAL
mmeBSU0677	.FKKAKSGK	LF.....D..ALL DIEQQVEYL.CAK

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FIG. 7C

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saro3834	IFVGEGLFSR	TVETMSARDA	SDTHMVIAEI	FRAMDTRLAD	RAAAGIKSWA
mmeMSI135	LLPD.GLFTK	LLK.RSARAP	ERAMSYLDKL	FEAME.....	RGGEF...DL
mmeCC0826	LLPE.GLFTR	LTRSMQMRPP	AEAAPQFDAL	FAMMR.....	AGGMF...GA
mmeDR0119.1	MLER.GIVTR	LLE.RARAPP	GEDQLYFQDL	FGAMK.....	GGGEF...WG
mmeDR2267	LIPR.GFFTE	LADD.ARAGR	GSSFDLFGGL	FRQMNTSERA	RGGRF.....
351					
mmeLfeLORF3P	NQFAYVNGGM	FSDENVIIPO	FTDELKRLIV	EDAGRGFOWS	GISPTIFGAV
mmeLre121P	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
mme	AAFPYINGKL	FEEPLPPA.Q	FDKAMREALL	.DLCS.LDWS	RISPAIFGSL
mmeNMA1791	KGFEYVNGGL	FKERLRTF.D	FTAKQHRALI	.DCGN.FDWR	NISPEIFGTL
mmeBSU0677	KEFPYVNGQL	FTEPHTEL.E	FSAKSRKLII	.ECGELLNWA	KINPDIFGSM
mmePflQ8	AKFPYVNGAL	FAEPLAS.EY	FDYQMREALL	AAC..DFDWS	TIDVSVFGSL
saro3834	DVFPYVNGQL	FSGS.TECPR	FSKIARSYLL	H..IGSLDWQ	KINPDIFGSM
mmeMSI135	TDITWFNGGL	FDGR..RALR	LDDGDIGLL.	.VAADSLDWG	LIDPTIFGTL
mmeCC0826	DIVHWFNGGL	FDEK..PALP	LERADIKLIH	DTAAEH.DWS	DLDPVFGNM
mmeDR0119.1	TDIRHFNGL	FDSE..DALA	LTSEDAAL.	.IIAAKLDWS	EVEPSIFGTL
mmeDR2267	APIPYFNGGL	FRAV..DPIE	LNRDELYLLH	KAALEN.NWA	RIQPQIFGVL
401					
mmeLfeLORF3P	FESTLN.PET	RRSGGMHYTS	IENIHKVIDP	LFLNDLHDEF	D.....
mmeLre121P	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
mme	FQSIMD.AKK	RRNLGAHYTS	EANILKLIK	LFLDELWVEF	E.....
mmeNMA1791	FQSVMD.AQE	RREAGAHYTE	AANIDKVIN	LFLNLRAEF	E.....
mmeBSU0677	IQAVAS.EES	RSYLGMYHYS	VPNIMKVIK	LFLDKLNQSF	.....
mmePflQ8	FQLVKS.KEA	RRSDGEHYTS	KANIMKTIGP	LFLDELRAEA	D.....
saro3834	IQAVAD.DEE	RGALGMHYTS	VPNILKVLNP	LFLDDLRAKL	E.....
mmeMSI135	FERFLD.PEK	RAQIGAHYTD	PEKIMRLVDP	VILRPLRQEW	EQARREIVEL
mmeCC0826	FEEALKATRE	RAALGAHYTD	REKILKIIDP	VITWPLMAQW	ETALAEIRAA
mmeDR0119.1	FENSLDV.DT	RSRRGAHYTS	VNDIERIVDR	VMEPLWAEW	D.....
mmeDR2267	FQSSMDKKEQ	HAK.GAHYTS	EADIMRVVLP	TIVTPFQRQI	EAATTO....
451					
mmeLfeLORF3P	.....	.....	.....	.....	.....KIQNMG
mmeLre121P	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
mme	.....	.....	.....	.....	.....KVK...
mmeNMA1791	.....	.....	.....	.....	.....AVK..A
mmeBSU0677	.....	.....	.....	.....	.....L
mmePflQ8	.....	.....	.....	.....	.....KL..VS
saro3834	.....	.....	.....	.....	.....E.....
mmeMSI135	LNGN.....	..RKPPMRR.	..QQSRR...	..MKREEAA	.....
mmeCC0826	LDARAAAEAE	RKAVLEAAAE	AMRADPVKAK	AGEAARRKTL	TAIAKRSDAA
mmeDR0119.1	.....	.....	.....	.....ALRLSL	PELKK.....
mmeDR2267	.....	.....	.....	.....	.....
501					
mmeLfeLORF3P	NRRQRVTRAK	AFRDKLGKLL	FFDPACGSGN	FLTETYLSLR	KMENECLRII
mmeLre121P	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
mme	..NNKNKLL	AFHKKLRLGT	FFDPACGCGN	FLVITYRELR	LLEIEVL.RG
mmeNMA1791	LKRDKAKKLA	AFYQKIQNLQ	FLDPACGCGN	FLIVAYDRIR	ALEDIIAEE
mmeBSU0677	DAYDDYTKLE	NLLTRIGKIK	FFDPACGSGN	FLIITYKELR	RMEINIKRL
mmePflQ8	SPSTSVAAL	RFRDSLSELV	FADMACGSGN	FLLLAYRELR	RIETDIIVAI
saro3834	.AGDNSRKLL	NLRNRMAKIR	VFDACGSGN	FLVIAYKQMR	ELEAEI....
mmeMSI135	.AEVR.SR.	.FTERLRKIR	ILDPACGSGN	FLYLALQOVK	DIETRAHDC
mmeCC0826	LOGAK.SALE	AFSLRLAAR	VLDACGSGN	FLYVALLAAR	DIETRAHDC

MARKED-UP VERSION

FIG. 7 D

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mmDR0119.1 ..NVRLERLF AFQDRLTAVR ILDPACGSGN FLFVALKKLL DLEYQVRMAA
mmDR2267 .....KELR AILDELASFQ VLDPAACGSGN FLYVAYRELR RLEARALL..

551                                     600
mmelfeLORF3P VGNQGA..LA LTDESEPKVK IQNFYGIEIN DFAVSVARTA MWIAESQMWE
mmLrel21P -----
mm LHRGGQ..QV LDIEHLIQIN VDQFFGIEIE EFPAQIAQVA LWLTDHQMNM
mmNMA1791 LKDKAD..GL FD.SPSVQCR LKQFHGIEID EFAVLIARTA MWLKNHQCNI
mmBSU0677 QELLGE..YL Y..VPSV..T LSQFYGIEIE DFAHDVAKLS LWIAEHQMNE
mmegcry RQRRGETGMS LNIEWEQKLS IGQFYGIELN WWPAKIAETA MFLVDHQANK
mmPflQ8 -----
saro3834 NRRRGEADRR SD.....IP LTNFRGIELR NFPAEIARLA LIIAEYQCDV
mmMSI135 ..EM..LG.M PAQLP..LVG PEILRGIEIN MMAAELARTT IWIG.DIQWQ
mmCC0826 ..ER..LG.L EVPTP..RVG LACVRGIEIE EYAAELARVT LWIG.DLQWH
mmDR0119.1 ..VMNDIGEF EMP.P..LVH PQQMLGIEIE TFAHELASIT LWMG.YFQWK
mmDR2267 ..RLRDL SAP GTALPPARVS IRQMHGLEYD PFGVELAKVT LTLAKELAIR

601                                     650
mmelfeLORF3P QTKDI..TFA NKDFLP.LDS NDSIYEGNAL RMDWNDI... ..VKPY
mmLrel21P -----
mm KISDEFGNYF A..RIP.LKS TPHILNANAL QIDWNDV... ..LEAK
mmNMA1791 RTQIRFDGEV ACHTLP.LED AAELIHANSL RTPW... ..QAA
mmBSU0677 ELKNEVHNAV R.PTLP.LHT AGDIRCANAI RVEWTEVCP. ....AQGS
mmegcry ELANAVGR.. PPERLP.IKI TAHIVHGNAL QLDWADILS. ....ASAA
mmPflQ8 -----
saro3834 LYRGQ..KEA LAEFLP.LDS QNWITCGNAL RLDWLSICPP TGTAVKLQAN
mmMSI135 IKNGIRS... ..KSIPILRK LDAIERRDAL VRQAQDVDTA RDAQG.....
mmCC0826 AKNNYRG... ..FAEPILSS LDQIECRDAL L..... .NADG.....
mmDR0119.1 RAHG.GH... ..WETPILQR LDNIQNRDAL L..... .NPDG.....
mmDR2267 EMHDL LGNTG LDFDQPL..P LDNL DRI V..... .QG.....

651                                     700
mmelfeLORF3P EL..... DYIMGNPPFV GYSLQTKEQK QDIKQEFFKY
mmLrel21P -----
mm KC..... CFILGNPPFV GSKSQTPGQK ADL.LSVFGN
mmNMA1791 D..... YIFGNPPFI GSTYQTKEQK NDL.ESICGH
mmBSU0677 EE..... VYVFGNPPYL GSKKQNKHEK SDM.LSIFGK
mmegcry K..... TYIFGNPPFL GHATRTAEQA QELR.DLWG.
mmPflQ8 -----
saro3834 DLFEMPLDQA EIDFENEGGE TYICGNPPYL GAKKKSSDQI EDMKRV...G
mmMSI135 DLLAALQPVS EDAAEAWEPEA EFIVGNPPFV GVRLMRQALG DPTVDRLFDV
mmCC0826 ..... TEAQWPAV DVIVGNPPFL GSKRLRDGLG NDYVERLFST
mmDR0119.1 ..... TEATWPRA DFIVGNPPFL GDKMMRSQLG EAYTTQLRET
mmDR2267 DALF..... TPWPRV DAIVGNPPFQ SKNKLQREM AAYVKKLRAH

701                                     750
mmelfeLORF3P TDKY..GKFD YVSGWYIKGA KYIQ.NSTIK VGFVSTDSII QGEQAPEIWK
mmLrel21P -----
mm LKSA..SDLD LVAAWYPKAA HYIQTANIR CAFVSTNSIT QGEQVSLWLP
mmNMA1791 IKGY..GLLD YVCNWWYKAA GIMAQHPQVQ TAFVSTNSIC QGQOVEILWG
mmBSU0677 VKNG..KMLD YISAWFYFGA KYAST.TNAK VAFVSTNSVT QGEQVSILWN
mmegcry TKDI..SRLD YVTGWHAKCL DFFKSREG.R FAFVTNSIT QGDQVPRLFG
mmPflQ8 -----
saro3834 LDKA..QLLD YVSAFIVRGL PLVAQQ.RCD MALVSTSSIC QGEQVSLIWP
mmMSI135 YDGRVSREAD LVCYWVEKSR AAVAADRTRR VGLVTTNSIR GGANRR.VLD
mmCC0826 YRGKVP AEAD FVAYWIAKAW ELVQAQQGRR AGLVTTNSVR GGASRK.VLD
mmDR0119.1 FKDRLEPGQSD LVCYWPEKAR ALTEAGVTTR AGFVTTNSIR GGNRR.VLD
mmDR2267 YPD.VPGRAD YCVYWIKAH D..QLGSGQR AGLVGTNTIR QNDSRVGGLD

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FIG. 7E

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	751		800
mmelfeLORF3P	VLFNDFHIFI	NYGYRSFEWN	NEAANKAKVD VVIVGFSTK. .EDKNPTIYD
mmeLre121P	-----	-----	-----V NKDKILYN
mme	LLLS.LGIKI	NFAHRTFSWT	NEASGVAAVH CVIIGFGLKD ..SDEKIIYE
mmeNMA1791	SLLN.QGIEI	HFAHRTFQWT	SQAAGKAAVH CIIVGFRQKP PMPSEKTLYD
mmeBSU0677	ELFK.FGIQI	NFAYKSFKWA	NNAKNNAAVI VVIVGFG... PLDTKVNKYL
mmegcry	PIFKA.GWRI	RFAHRTFAWD	SEAPGKAAVH CVIVGFDKES ..QPRPRLWD
mmePflQ8	-----	-----	-----
saro3834	RILKSAN..V	KFAYRPFRWS	NSAANNAGVY CTIIGLTGSE VSNKK.....
mmeMSI135	RIIA.ES.RL	FEAWSDEPWV	VDG...AAVR VSLICFGHG. .EDPLCL...
mmeCC0826	PIAD.AG.AL	MEAWADEPWA	LEG...AAVR VSMFGFGDG. .FAERRL...
mmeDR0119.1	RIKA.TG.DL	FMAWPDEPWQ	QNG...AAVR VSLFGFDNG. .TETLRT...
mmeDR2267	YVVQHGG.TI	TDAVGTQVWS	GD...AAVH VSIVNWVKGP AEGPKHLAWQ
	801		850
mmelfeLORF3P	EQKIIS....	..A.KHINQY	MYDSDNIFID TTRKY.IEA. MPKMKTGNRP
mmeLre121P	SSN*ISH....	..C.KNINGY	LFDGNNIFV. TNRPAPLSN. VPRMHNGCKL
mme	YESINGEPLA	IKA.KNINPY	LRDGVVDVIA. CKRQQPISK. LPSMRYGKNP
mmeNMA1791	YPMKGEPEK	HAV.ANINPY	LIDAPDLII. AKRSRPIHC. EPDMVNGSKP
mmeBSU0677	FVD...ETTK	L.V.SNISPY	LTDGENILV. SSRTKPISD. LPKLHFGNMP
mmegcry	YPDVKGEVPS	VEVGQSINAY	LVDGPNVLVD KSR.HPISSE ISPATFGNMA
mmePflQ8	-----	-----	-----P.ADE RSQMDAGGKP
saro3834	...LFGEGSV	VEC.SSIAPY	LVPGEI.IC APRQSSIS.G FARMVMGSNP
mmeMSI135	..DGRT....	...VAQINAD	LTAGVTDLTK ARRL.S..EN QNVAFMGDTK
mmeCC0826	..EGRK....	...AEHLHSD	FRGASTDVT ALRL.K..EN ASIAFMGDTK
mmeDR0119.1	LNDGH.....	...VGVINAD	LNAG.TDVKQ AQKL.P..EN AGVSFIGTQK
mmeDR2267	VGDHRTSPWQ	STELPVINSA	LSAG.TDVTQ AQKL.RVNMN SGACYQGQTH
	851		900
mmelfeLORF3P	ADGGALILSP	KEAKEL.VNE	EPQSKQ...F IKKLTGSKEF IT.GKYRYCL
mmeLre121P	LDGGFYTLTS	QERKEA.ISK	DPYADK...F IRPYLGAKNF IH.GTARYCI
mme	TDDGNFLFTD	EEKNQF.ITN	EPSSEK...Y FRRFVGGDEF IN.NTSRWCL
mmeNMA1791	TEGGNLILST	AEKDAL.IAA	EPLAEQ...Y IRPFIGADEF LN.GKTRWCL
mmeBSU0677	NDGGGLLFTI	TEYTD.AINK	YPELVP...Y FKKFIGSVEF IN.GGLRYCL
mmegcry	RDGGNLLVEV	DEYDEV.MS.	DPVAAK...Y VRPFRGSREL MN.GLDRWCL
mmePflQ8	VEGGNLLFAE	EEKQRL.VEG	NVDVVK...F LKRVIYGASEY IR.GEVRFCCL
saro3834	VDGKRLIFEQ	DEKESV.VAA	DPRSER...F FKRYGGTQEL VN.GVDRWCL
mmeMSI135	G.GAFDVPGS	LARAWLSMPM	NPNGRPNSDV LRPWRNGMDV ARR...RDM
mmeCC0826	G.GAFDVSGE	IAREWLRLPL	NPNGRPNSDV LKPWRNAMDM TRRS...SDK
mmeDR0119.1	G.GAFDIPGD	LARSWLSVP.	NPDRVSNADV LKPWVNGMDL TRRP...SGR
mmeDR2267	GHKGFLLDGL	EAGQMLSAE.	....RKNAEV IFPYLTGDEL LRTSPPHPTR
	901		950
mmelfeLORF3P	WLVNVTP...	.KQLR..SMP	L..VLKRVE. QCKENR.LSG APDRQKLAAT
mmeLre121P	WLKDANP...	.KDIH..QSP	F..ILDRIN. KVAEFRSQQK SKDTQKYAKR
mme	WLDG.ADIS.	..EIR..AMP	L..VLARIK. KVQEFRLKSS AKPTRQSAST
mmeNMA1791	WFHGVSDVKR	NHDLK..QMP	Q..VQARIQ. AVKTMREASS DKQTQKDAAT
mmeBSU0677	WLNE....AK	YEKIK..SNP	L..IQERIS. ISKNHREKST DKGTNKLALT
mmegcry	WLVDVAP...	.SDIA..QSP	V..LKKRLE. AVKSFRADSK AASTRKMAET
mmePflQ8	WISD....SQ	EQEAK..SNS	D..INCKLN. AVAAFRKSP KAATKKGAAW
saro3834	WIND....DQ	VDDAK..AIA	E..IAKVE. SCRSYR.QGA GRDAQKAANR
mmeMSI135	WIVDFGWEMS	EQEAALYEP	FQHIREHVFP .....ER SKN.....
mmeCC0826	WIIDFGWTMS	EADAALFETP	FRHVLLHVFP .....ER DRN.....
mmeDR0119.1	WIIDFA.QMD	EGEARQYLQP	MAYVEQKIRPER ATN.....
mmeDR2267	YVIDF.QPRD	VFGARAYKLP	FARIEREVLP TRQAAAAEEE ARNAEVLAAN

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1000

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FIG. 7F

15116

mmeLfeLORF3P	P.....	HL.....	FREQ	MNPDNYMIVP	LVTGCRKRYV
mmeLre121P	P.....	ML	PTRLAYYSHD	EHTD.MLIVP	ATSSQRREYL
mme	P.....	M.	..KFFYISQP	.DTDY.LLIP	ETSSSENRFI
mmeNMA1791	P.....	W.	..LFQKIRQP	SDGNY.LIIP	SVSSESRRFI
mmeBSU0677	P.....	W.	..KFRDTHE.	.TTNYSIVVP	SVSSENRFYI
mmegecry	P.....	HL	FGQ....RSQ	PDTDY.LCLP	KVVSERRSYF
mmePflQ8	P.....	H.	..KFEEVKQI	GN.EVVTIVP	KVSSESREYL
saro3834	P.....	HS	FC.YRTFQE.	...NIGIHVG	LTIGNGLSHV
mmeMSI135	....RRDAYR	...ERWWRHV	EPRPAFHASL	QGHSTRYMATP	RV.AKHRTFV
mmeCC0826	....NREMYR	...LNWWKHV	EPRQGLMKRV	PALSRLLVTP	EV.SKHRLFI
mmeDR0119.1	....SDRPSR	...ERWWLHQ	RSRPELREAT	IELDRFIGIP	RV.AKHLLPV
mmeDR2267	PKAKTNKHHR	NFLNQWWALS	YGRSEMIEKI	SSLSRYIVCS	RV.TKRQVFE
1001			1050		
mmeLfeLORF3P	PFYLG.NDI	IPTNLATIIP	EADHYAFGVL	ESIVHMAWMR	VVA...GRKG
mmeLre121P	PIGYVSEKNI	VSYSL.MLIP	NASNFNFGIL	ESKVHYIWLK	NFC...GRLK
mme	PIGFVDRNVI	SS.NATYHIP	SAEPLIFGLL	SSTMHNCWMR	NVG...GRLE
mmeNMA1791	PIGYLSFETV	VS.NLAFILP	NATLYHFGIL	SSTMHNAFMR	TVA...GRLK
mmeBSU0677	PMGLAGADTI	LS.NLIYVIY	DAEYLLGIL	MSRMHMTWVK	AVA...GRLK
mmegecry	TVQRYPSNVI	AS.DLVFHAQ	DPDGLMFALA	SSSMFITWQK	SIG...GRLK
mmePflQ8	PVGLLPGRSI	VT.DLAFALY	DAPLWNMALI	ASRLHLVWIG	~~~~~
saro3834	PAD.LKSSGF	VSSHTAYMIY	GWHPVEFALL	NSRLMLVWTE	TVG...GRLG
mmeMSI135	WLD....QAI	VPDSRIFAFS	RSDDVFFGIL	HSRFHEAWSF	GTCSWHGV.G
mmeCC0826	WLD....ARV	LPDHKLQVVT	LDDDCSFGVL	HSRFHEVWAL	AAGSWHGS.G
mmeDR0119.1	WLP....EGT	LPDSQVVVIA	RDDDFIFGVL	ASTIHRSWAR	MQGTYMGV.G
mmeDR2267	FLD....NGI	RPSDGLQIFA	FEDDYSFGVI	QSSVHWQWLI	ARG...GTLT
1051			1100		
mmeLfeLORF3P	TSYRYSKNLV	YTNFPWPV.V	DINQKEK...	.....ITI	TAQDILNARN
mmeLre121P	SDYRYSNTII	YNNFPWPT.V	GDKQEON...	.....ISE	TAQGILNTRK
mme	SRYRYSASLV	YNTFPWIQ..	....PNEKQ.	....SKAIEE	AAFAILKARS
mmeNMA1791	SDYRYSNTVV	YNNFPFPE..	SCRLPSENDR	PDPLRAAVEA	AAQTVLDARG
mmeBSU0677	TDYRYSAGLC	YNTFFPIPE.L	STRRKNE...	.....IEE	AILEILDRL.
mmegecry	SDLRFANTLT	WNTFPVPE.L	DEKTRQR...	.....IIK	AGKKVLDARA
mmePflQ8	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
saro3834	NGMRFSNTIV	YNTFPVPS.L	TDQNK.....	....ADLTR	CAEDILLARE
mmeMSI135	NDPTYNSAGV	FETFPFPEGL	TPDIPAVRYE	KDSRAIAISK	AAKRLDDIRN
mmeCC0826	NDPRYTISTT	FETFPFPEGL	TPNIAAVDYE	GDPRAQAIAA	AAAELNRLRE
mmeDR0119.1	NDLRYTPSTC	FETFPVP...	APT.....	.DEQRAEIEK	WAKYIVQLRE
mmeDR2267	ARLMYTSDTV	FDTFPWP*D.	.PTLAQVR..	.....AVAA	AAVKLRELRN
1101			1150		
mmeLfeLORF3P	.....	.....	...LY.....	....PDSSLA	DLYDPLTMPI
mmeLre121P	.....	.....	...LY.....	....PDSSLA	DLYDPLTMPV
mme	.....	.....	...NY.....	....PNESLA	GLYDPKTMPs
mmeNMA1791	.....	.....	...QYRREAQ	EAGLPEPTLA	ELYAPDAGYT
mmeBSU0677	.....	.....	.....EE	QGG....TLA	ELYNPSTMPI
mmegecry	.....	.....	...LH.....	....PERSLA	EHYNPLAMAP
mmePflQ8	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
saro3834	.....	.....	...SHFP...	....ATIA	DLYDPETMPE
mmeMSI135	AWLNPSDLVQ	IKPEVVPGYP	DRILPKDIAS	DAILRDRTL	NLYNR.....
mmeCC0826	AWLNPPDLVR	IEPEVVPGYP	DRVLPVSPEA	GAEKKKRTL	NLYNQ.....
mmeDR0119.1	HLLN.....	.....	.....Q	DA...KGTLT	GIYNQLEKLR
mmeDR2267	KVMREQ....	.....GW.	.....	.....SLR	DLYRTLDMPG
1151			1200		
mmeLfeLORF3P	E.....	..LRKAHEAND	KAVLKAYGLK	P.SATEPEI..	.VOHLFKMYE
mmeLre121P	E.....	..LRKAHEAND	KAVLKAYGLS	P.KATEQEI..	.VEHLFKMYE

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FIG. 7G

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mme	E.....	.LLKAHQKLD	KAVDSVYGFK	.GPNT..EIA	RIAFLFETYQ
mmeNMA1791	A.....	.LDKAHATLD	KAVDKAYGYK	TGKNTDDEAE	RVAFLFELYR
mmeBSU0677	E.....	.LKVAHEKLD	GIVERAYRQK	QFES..DE.E	RLEVLLKLYQ
mmePflQ8	E.....	.LIKAHDALD	REVDKAFGAP	RKLTTVRQ..	RQELLFANYE
saro3834	S.....	.LRAAHRND	EVLERIY...	IGRRFRNDTE	RLEKLFELYT
mmeMSI135	.....RP.Q	WLVDASDLD	AAVAGAYGWP	ADIS...EDE	ALANLLELNL
mmeCC0826	.....RP.A	WLDMAHQRLD	AAVAAAYGWP	DGLT...DDE	ILERLFALNQ
mmeDR0119.1	NSPDAAHPVS	ALATAHDKLD	QAVATAYGWE	WPLN...EDQ	VLERLLALNL
mmeDR2267	KNP.....	.LRDAQERLD	AAVSAAYGLP	AGA.....D	MLDFLLALNA

	1201				1250
mmelfeLORF3P	KLTKKDW---	-----	-----	-----	-----
mmeLre121P	KLTKGER*---	-----	-----	-----	-----
mme	KMTSLLPPEK	EIKKSKGKN*	-----	-----	-----
mmeNMA1791	KAAAIA---	-----	-----	-----	-----
mmeBSU0677	EMTER---	-----	-----	-----	-----
mmePflQ8	KLISHQP---	-----	-----	-----	-----
saro3834	KMTGGRSSEG	GAA-----	-----	-----	-----
mmeMSI135	AREAFNEHAK	SGLKTRKPRR	RPTPEEVRRR	PQMKLPIAGG	RKSVVGPQQL
mmeCC0826	ERAAAGR---	-----	-----	-----	-----
mmeDR0119.1	ERCPA---	-----	-----	-----	-----
mmeDR2267	XVAAAEARGA	AVTGPGLPAG	LNTADFTAD	AVRPLG*---	-----

	1251		1273
mmelfeLORF3P	-----	-----	---
mmeLre121P	-----	-----	---
mme	-----	-----	---
mmeNMA1791	-----	-----	---
mmeBSU0677	-----	-----	---
mmePflQ8	-----	-----	---
saro3834	-----	-----	---
mmeMSI135	TTKDRENQPT	SAERPRNTRK	RTS
mmeCC0826	-----	-----	---
mmeDR0119.1	-----	-----	---
mmeDR2267	-----	-----	---

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